

ABSTRACT

A method of polishing a metal layer comprising the following steps. A structure having an upper patterned dielectric layer with an opening therein is provided. A barrier layer is formed over the patterned upper dielectric layer and lining the opening. A metal layer is formed over the barrier layer, filling the opening. A first polish step employing a first slurry composition is conducted to remove a portion of the overlying metal layer. A second polish step employing the first slurry composition is conducted to: polish the partially removed overlying metal layer; and to expose portions of the barrier layer overlying the patterned upper dielectric layer. A third polish step employing a second slurry composition is conducted to remove the exposed barrier layer portions and exposing underlying portions of the patterned upper dielectric layer. A fourth polish step employing the second slurry composition and BTA is conducted to buff the exposed upper dielectric layer portions.